

ZCE 111
Assignment 6

Q1

▮ Interpolate the sample data `blackbody_diluted.dat`, using Lagrange polynomial.

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▮ Interpolate the sample data `monomial.dat`, using Lagrange polynomial.

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▮ Interpolate the sample data `datasemicircle.dat`, using Lagrange polynomial.

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▮ Interpolate the sample data `data4_a5.dat`, using Lagrange polynomial.

Q2

- Using the sample data `monomial.dat`
- write a code to construct the Vandermonde matrix
- Solve the matrix equation for the coefficients a_k .
- Then obtain the resultant interpolating polynomial

$$p(x) = a_n x^n + a_{n-1} x^{n-1} + \dots + a_2 x^2 + a_1 x + a_0. \quad (1)$$

- Overlap the interpolating polynomial on the raw data to see if they agree with each other.

▫

- Repeat the interpolation using the sample data `blackbody_diluted.dat`.

Q3

- Modify the code `simulate_NPbox.nb` to a 3D box.